

PATENT SPECIFICATION

(11) 1 448 843

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- (21) Application No. 7262/76 (22) Filed 24 Aug. 1973
(62) Divided out of No. 1 448 841
(31) Convention Application No. 283 818
(32) Filed 25 Aug. 1972 in
(33) United States of America (US)
(44) Complete Specification published 8 Sept. 1976
(51) INT CL² E02F 3/44//B66C 3/02
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B8H 21A
E1F 18 22

(19)



(54) AN EXCAVATOR INCORPORATING A PIVOTABLY MOUNTED IMPLEMENT

(71) We, CATERPILLAR TRACTOR CO., a Corporation organised and existing under the laws of the State of California, United States of America, of 100 N.E. Adams Street, Peoria, State of Illinois 61602, United States of America, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an excavator incorporating a pivotally mounted implement. This application has been divided from Patent Application No. 40238/73 Serial No. 1 448 841.

According to the invention there is provided an excavator comprising a boom, a stick arm, an implement, means pivotally attached to the stick arm and interconnecting the stick arm and the implement to support the implement, and cushion stop means arranged to limit the pivoting of the means pivotally attached to the stick arm in the direction of the stick arm.

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

Fig. 1 is a side elevational view of a hydraulic excavating machine with a clamshell bucket attached to the end of a stick arm and incorporating cushion stop means according to the invention; and

Fig. 2 is an enlarged side elevational view of the clamshell bucket assembly of Fig. 1.

Referring to Fig. 1, a clamshell bucket assembly, designated generally by the reference numeral 10, is shown attached to the end of a stick arm 12 of an excavating machine 14. The stick arm 12 is fastened to the end of a boom 16, and the movement of the stick arm 12 is controlled by a hydraulic cylinder 18 carried on boom 16. Movement

of the boom 16 is controlled by a pair of hydraulic cylinders, one of which is shown at 20.

The assembly 10 is shown in larger detail in Fig. 2. Such assembly 10 includes a trunnion support assembly 22, a swivel joint assembly 24, a hydraulic cylinder 26, and an implement in the form of a bucket 28. Trunnion assembly 22 is pivotally fastened to stick arm 12 by means of pin 30, and the swivel joint assembly 24 is pivotally mounted to trunnion assembly 22 by mechanism described in detail in the Specification of our Patent Application No. 40238/73 Serial No. 1 448 841.

A cushioned stop 210 is fixed to the trunnion support 22, and is positioned to contact the stick arm 12 if the bucket assembly 10 should pendulate in a wide arc toward the stick arm 12. In such situations, the cushioned stop 210 would absorb the force of the bucket assembly 10, and prevent it from striking the stick arm 12.

WHAT WE CLAIM IS:—

1. An excavator comprising a boom, a stick arm, an implement, means pivotally attached to the stick arm and interconnecting the stick arm and the implement to support the implement, and cushion stop means arranged to limit the pivoting of the means pivotally attached to the stick arm in the direction of the stick arm.

2. An excavator as claimed in claim 1, wherein the cushion stop means comprise a cushioned stop fixed to the means pivotally attached to the stick arm and positioned to contact the stick arm to limit the pivoting of said means in the direction of the stick arm.

3. An excavator as claimed in claim 1 or 2, wherein the said implement is a bucket.

4. An excavator as claimed in claim 1, substantially as hereinbefore described with reference to the accompanying drawings.



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of the boom 16 is controlled by a pair of hydraulic cylinders, one of which is shown at 20.

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WHAT WE CLAIM IS:—

1. An excavator comprising a boom, a stick arm, an implement, means pivotally attached to the stick arm and interconnecting the stick arm and the implement to support the implement, and cushion stop means arranged to limit the pivoting of the means pivotally attached to the stick arm in the direction of the stick arm.

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3. An excavator as claimed in claim 1 or 2, wherein the said implement is a bucket.

4. An excavator as claimed in claim 1, substantially as hereinbefore described with reference to the accompanying drawings.

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